

Title (en)  
MULTICORE OPTICAL FIBER AND MULTICORE OPTICAL FIBER CABLE

Title (de)  
MEHRADRIGE OPTISCHE FASER UND MEHRADRIGES FASEROPTISCHES KABEL

Title (fr)  
FIBRE OPTIQUES MULTICOEUR ET CÂBLE À FIBRES OPTIQUES MULTICOEURS

Publication  
**EP 3779543 A4 20210512 (EN)**

Application  
**EP 19786054 A 20190227**

Priority  
• JP 2018074674 A 20180409  
• JP 2019007637 W 20190227

Abstract (en)  
[origin: US2021003774A1] An MCF cable according to an embodiment contains a plurality of MCFs each including at least one coupled core group and a common cladding.  $\Lambda$  is set such that  $\kappa$  at a wavelength of 1550 nm is falls within a range of from  $1 \times 10^{-1}$  [m<sup>-1</sup>] to  $1 \times 10^3$  [m<sup>-1</sup>], and  $((3AC_{avg})/(2-K)$  or  $(\beta \wedge C_f)/(2\kappa)$  is set in a specific range in a wavelength band of from 1530 nm to 1625 nm, where  $C_{avg}$  [m<sup>-1</sup>],  $C_f$  [m<sup>-1</sup>], and  $ft_{twist}$  [turn/m] represent the average curvature, the pseudo-curvature, and the average torsion, respectively, for each MCF, and  $\kappa$  [m<sup>-1</sup>],  $\beta$  [m<sup>-1</sup>], and  $\Lambda$  [m] represent the coefficient of mode coupling between adjacent cores, the average of propagation constants, and the core center-to-center distance, respectively.

IPC 8 full level  
**G02B 6/44** (2006.01); **G02B 6/02** (2006.01)

CPC (source: EP US)  
**G02B 6/02042** (2013.01 - EP US); **G02B 6/0281** (2013.01 - US); **G02B 6/03611** (2013.01 - US); **G02B 6/03627** (2013.01 - US); **G02B 6/03633** (2013.01 - US); **G02B 6/0365** (2013.01 - US); **G02B 6/4413** (2013.01 - EP); **G02B 6/4434** (2013.01 - EP)

Citation (search report)  
• [Y] US 2017102501 A1 20170413 - HAYASHI TETSUYA [JP]  
• [Y] US 2013301998 A1 20131114 - HAYASHI TETSUYA [JP]  
• [A] JP 2017009629 A 20170112 - NIPPON TELEGRAPH & TELEPHONE  
• [A] JP 2017167196 A 20170921 - NIPPON TELEGRAPH & TELEPHONE  
• [A] CARTAXO ADOLFO V T ET AL: "Discrete Changes Model of Inter-core Crosstalk of Real Homogeneous Multi-core Fibers", JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE, USA, vol. 35, no. 12, 15 June 2017 (2017-06-15), pages 2398 - 2408, XP011649463, ISSN: 0733-8724, [retrieved on 20170516], DOI: 10.1109/JLT.2017.2652067  
• See references of WO 2019198365A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**US 11256026 B2 20220222**; **US 2021003774 A1 20210107**; CN 112219145 A 20210112; CN 112219145 B 20221220; EP 3779543 A1 20210217; EP 3779543 A4 20210512; JP 7268677 B2 20230508; JP WO2019198365 A1 20210415; WO 2019198365 A1 20191017

DOCDB simple family (application)  
**US 202017025792 A 20200918**; CN 201980024262 A 20190227; EP 19786054 A 20190227; JP 2019007637 W 20190227; JP 2020513108 A 20190227